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ABSTRACT

Research has found firstborns to be more ambitious, rule-oriented, authority-oriented, helpful, and responsible, and less oriented toward peers, their own needs, social activities, and group cooperation than are laterborns. To explore whether those occupying different birth order positions perceive themselves as psychologists have described them, 85 undergraduates (45 males, 40 females) participated in a study. All participants were white, American, 18 years of age or older, and from two-child families in which no siblings were deceased. Both parents were alive and lived together at least through the subject's 12th year, and no adults other than the parents lived in the home. The subjects provided background information, answered a forced-choice questionnaire, chose one of four descriptions that best described themselves (from Walter Toman's descriptions of personality patterns associated with birth order positions), and completed the Tennessee Self-Concept Scale. Results indicated that firstborns with the same sex sibling perceived themselves as more like firstborns than did those with a different sex sibling. Firstborn females with the same sex sibling reported more positive self-concepts than did firstborn males with the same sex sibling. Firstborns with the same sex sibling ascribed more firstborn characteristics to themselves than any other group. In describing themselves as psychologists describe them, firstborns demonstrate their greater conformity to the established point of view. The appendix includes Toman's descriptions of female and male personality types and questionnaires used in the project. (LLL)

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DO FIRST AND LATER BORNS AGREE WITH PSYCHOLOGISTS?

by

Diane Cohen

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"Do First and Later Borns Agree with Psychologists?"

ABSTRACT

Psychologists studying birth order have defined ordinal position in terms of actual order of birth in the family, then proceeded to investigate personality differences associated with various ordinal positions from an objective, external, observer frame of reference. This study explored whether those occupying different birth order positions perceive themselves as psychologists have described them, taking sex of sibling as well as ordinal position into account. Objective studies have found firstborns to be more ambitious, rule-oriented, authority oriented, helpful, and responsible, while they are less oriented toward peers, their own needs, social activities, and group cooperation than are laterborns.

Method

The subjects were 85 undergraduates (45 males, 40 females, receiving extra credit in introductory Psychology courses for participation. They were all white, American, and 18 years or older. They were from two-child families in which no siblings were deceased. Both parents were alive and living together at least through the subject's 12th year. No adults other than the parents were living at home. No more than six years spacing was allowed between siblings.

Three measures of personality factors identified by the extant literature as differentiating first from later borns were employed. The Tennessee Self-Concept Scale was selected because firstborns are described as having more of the characteristics that are socially

esteemed than laterborns. Subjects were asked to select the personality description best characterizing themselves from Toman's descriptions of personality patterns associated with birth order positions. A forced-choice questionnaire was generated of descriptive statements associated with either first or later born status in the objective empirical literature. Here subjects were asked to identify which statements described them.

Results

Both the Tennessee Self-Concept Scale and the questionnaire, in an analysis of variance, yielded significant findings in which firstborns with the same sex sibling perceived themselves as more like firstborns than did firstborns with a different sex sibling; Toman's measure showed no significant results. On measures of Personal Self-Concept and Self-Satisfaction, sex interacted with birth order and sex of sibling. Separate analyses for males and females showed that the stronger effect was among females. Females who are firstborn with the same sex sibling reported more positive self-concepts on the Tennessee Self-Concept Scale than did male firstborns with the same sex sibling. Firstborns with the same sex sibling also ascribed more firstborn characteristics to themselves on the questionnaire than any other group.

Interpretation

Sex of subject and sex of sibling were both found to be significant factors in subjects' self-attributions from among characteristics objectively associated with birth order. Sampson (1962) found that

firstborn females were ever higher than firstborn males on three characteristics associated with firstborns in general: need for achievement, responsibility, and self-confidence. He theorized that this is because parents expect greater responsibility at an earlier age from females. This may explain why objectively defined birth order differences occurred more often among females than males in this study.

However, females attending college may be a more self-selected high need achievement, independent, and self-confident group than their male counterparts since college educations are still generally seen as less necessary for them than for their brothers.

Although the effects are stronger for females, both male and female firstborns with the same sex sibling show higher perception as a firstborn than those firstborns with a different sex sibling. According to Hornbostel and McCall (1980), competition between siblings of the same sex is more intense than between siblings of different sexes. The intense competition in addition to the already strong need for achievement in firstborns could account for the higher degree of self-perception of ambitiousness and other "firstborn" characteristics.

Firstborns, in describing themselves more than laterborns like psychologists describe them, have again demonstrated their greater conformity to the establishment point of view.

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I. INTRODUCTION

The majority of studies in the Birth Order literature have focused on objective measures correlated with "objective" birth order. "Objective" birth order refers here to the actual ordinal position in the family (i.e., firstborn, secondborn, etc.). There are several fairly well-accepted characteristics that have been correlated with birth order. Firstborns tend to be more ambitious, rule-oriented, authority-oriented, helpful, and responsible. On the other hand, laterborns tend to be more oriented toward peers, their own needs, social activities, and group cooperation. Many studies support these findings (Adams, 1972; Falbo, 1977 & 1981; Pfouts, 1980; Clausen, 1966, Kammeyer, 1967; Sampson, 1962; Adler, 1928; McDonald, 1971), and a few contradict them (Schooler, 1972; Zajonc, 1976; Nystul, 1974; Sampson, 1965).

The most consistent finding in this area has been "greater educational attainment, including college attendance, among firstborns" (Adams, 1972, p. 418). This demonstrated educational advantage for firstborns fits well with the birth order effects found in achievement. Falbo's (1977) review of the literature supports a birth order effect for achievement in which only children and firstborns tend to achieve more than laterborns.

> Disproportionate numbers of first and only borns have been found among eminent men [Ellis, 1904], the faces on Time covers [Toman and Toman, 1970], psychologists [Roe, 1953], and other groups presumably representing achievement (Falbo, 1977, p. 48).

In addition, research has supported the notion that there is greater academic achievement for this group.

According to Falbo (1977), there are several possible explanations for the birth order effects in achievement. First, it may be that firstborns are simply more intelligent than laterborns. Research by Pfouts (1980) indicates that family socialization shapes firstborns' academic overachievement relative to secondborns even when secondborns are more intellectually gifted. Therefore, it seems that family structure and process tend to favor firstborns' over laterborns' intellectual development.

Another explanation for higher achievement in firstborns is due to their educational advantage. The question remaining is what brings about this advantage? Falbo (1977) argues that firstborns are more likely to obtain a higher education due to economic feasibility. It could also be argued that such an advantage is due to higher educational aspirations. From another of Falbo's studies (1981), firstborns show significantly higher ($p < .05$) educational aspirations than middle and lastborns.

> The combination of positive parental attention [Kidwell, 1978; Lasko, 1954] with high parental expectations [Clausen, 1966; Kammeyer, 1967] leads only and firstborns to develop the persistent tendency to set relatively high standards for themselves. This effect was found for educational aspirations (Falbo, 1981).

Firstborns also have higher status expectations although sex of the individual has a significant influence here. In a study by Platt et al. (1968), firstborn males expected higher status but not necessarily highest salary in accordance with Adler's observations of the firstborn's concern with status. Firstborn females, however, expected higher salaries while laterborn females expected higher occupational status than any of the other groups. Sex of the sibling

was not considered here and might help explain these results; it may be a confounding variable.

Falbo's (1977) last explanation for birth order effects in achievement suggested that achievement-related personality characteristics may develop as a result of childhood experiences, as a firstborn within a family. One such characteristic is achievement motivation; this characteristic is fostered by "parents imposing relatively high standards of mature behavior on their children at earlier ages" (Rosen & D'Andrade, 1959; Winterbottom, 1958).

According to Clausen (1966) and Kammeyer (1967), firstborns do receive greater pressure for more mature behavior from parents than do laterborns, especially with the presence of younger siblings. In this situation, the adults need to spend more time attending to the younger children. In addition, because parents of firstborns are relatively inexperienced, they are thought to often expect too much from them (Falbo, 1981).

Need for achievement is another achievement-related personality characteristic. Hornbostel and McCall (1980) report that

> firstborns, who often have a closer emotional tie to parents, are more likely conditioned to greater social dependence and commitment to adult values. This appears to result in the development of stronger need-achievement for firstborns (Schacter, 1959).

This is supported by Sampson (1962), who reports a significant tendency for firstborns to have a higher need for achievement than laterborns.

The achievement advantage of firstborns is probably aided by the firstborns' teaching role with their younger siblings. This process is quite beneficial intellectually to the first child.

In addition to enhancing understanding and improving skills in the process, the firstborn learns helpfulness and patience (Pfouts, 1980).

Differential parental treatment has quite an effect on the higher achievement found in firstborns relative to laterborns. Koch (1954) reported the parents as paying more attention to the firstborn; Rosen (1961) described the parents as talking and interacting more with the first. Stout (1960) and Lasko (1954) both reported parents to be more directive of the firstborn child. Davis (1959), McArthur (1956), Rosen (1961), Sampson (1962), and Sutton-Smith, Roberts, and Rosenberg (1964) all referred to the pressure placed on the first child to achieve and be responsible. In a study by Sears, Maccoby, and Levin (1957), it was noted that there seems to be an inconsistency in the training of the firstborn children that does not characterize the training of laterborns (Hilton, 1967). Hilton's study confirmed this inconsistent training, reporting that firstborns are "interfered with more, reacted to more extremely, and treated more inconsistently" (p. 288).

Inconsistency and interference inhibit development of internal points of reference for self-evaluation. Therefore, without such reference points, the child is more likely to be influenced by the attitudes of others. They will not likely set their own goals; instead, they must determine adequate achievement through reactions of others. Here develops a strong need for achievement as satisfaction only comes when the child is externally rewarded.

The competitive and achievement-oriented behavior of the firstborn is explained a little differently by Alfred Adler (1928). "The

oldest child, who for a while has sole claim upon his parents' attention . . . is eventually 'dethroned' by the coming of a younger brother or sister" (Adams, 1972). The oldest often fights to restore his place; therefore, the dethroned should be more independent and more competitive than the "never dethroned."

Birth order effects on social responsibility, according to the socialization hypothesis, show firstborns scoring higher on social responsibility. These results are confirmed by McDonald (1971), and an explanation is given. Firstborns, because they are more susceptible to parental influence, "may become more highly socialized than laterborns, especially in the sense of feeling relatively more obligated to conform to the expectations of adult or authority figures" (p. 175).

The greater susceptibility of firstborns to parental influence may be due to a higher external locus-of-control; this is the feeling that events are not under an individual's control. This feeling is thought to be largely a result of parental attention in childhood. Such attention leads the child to look to social approval for support rather than to him or herself. As mentioned earlier, a need for social approval may lead to greater need for achievement; it also could foster the high degree of social responsibility and helpfulness seen in firstborns (Walter and Ziegler, 1980).

"Whereas the firstborn and the only children were more likely to ask for direct help and/or reassurance," Hilton (1967, p. 289) reported that "the laterborns were more likely to praise themselves." In this way, secondborns are freed from some of the social responsibility

pressures that are placed on firstborns. They also may develop a desire to fulfill their own needs when they see themselves as having deserved such.

So, while firstborns may receive more attention and have more interaction with the parents, he or she will also more likely receive stricter training and be expected to be more responsible. The lastborn, being the youngest, "enjoys a more relaxed and easy-going relationship with parents and often does not experience the pressures and expectations from the parents that are more characteristic of the firstborn" (Kidwell, 1981, p. 318).

Part of the differences in sibling personality traits is the result of the different roles children play in the sibship; this is due to dissimilar treatment by parents based on order of birth.

> The firstborn is trained within the family to prefer the parent-surrogate role [Sutton-Smith et al., 1964] and to assume task-oriented leadership positions both with younger siblings and outside the family. In contrast, the laterborns tend to be more dedicated to sociability and to peer relations than to task achievement [Chemers, 1970] (Pfouts, 1980).

According to McDonald (1971), laterborns have a higher expected need for affiliation, and others have a greater influence on them relative to firstborns. These factors, based on the literature, lead to an association between laterborns and higher sociability.

According to Sampson (1965), "'a picture emerges of the somewhat more sociable and more highly peer-rated laterborn child' (Simon et al., 1971)." However, perceived popularity, which is the degree to which an individual believes he or she is liked, was not significantly higher for laterborns.

Here, a distinction needs to be made between sociability and social identity. Sociability involves a need for affiliation and may represent an individual with many friends. On the other hand, social identity, which is the positive sense of social self, may reveal a person having fewer friends but having a higher positive sense of social self. The laterborns' need for affiliation may yield a more social individual, yet the firstborn will show a higher level of self-esteem while possibly having fewer friends.

Self-esteem has been found significantly higher for firstborns than for laterborns.

> Given that firstborns are older (and therefore, larger, more capable, etc.) than their younger siblings, the outcome of sibling comparison for firstborns would almost always inevitably be more positive than for laterborns. To the extent that this social comparison process determines self-esteem, one would expect firstborns to have higher self-esteem than laterborns (Falbo, 1981, p. 129).

Other significant determinants of self-esteem are parental warmth and acceptance. Parents have a limited amount of time and energy to devote to their children; therefore, the more children there are, the greater the competition for parental attention--or for the "kinds of admiration and expressions of acceptance which seem to influence self-concepts" (Sears, 1970, p. 283).

Since firstborns have a time period without competition for parental attention, they already have an advantage. In addition, later children "have the everlasting handicap of being smaller, younger, less effective, then their older competitors" (Sears, 1970, p. 284). Thus, it is to be expected that only and oldest children would have better self-concepts than middle and youngest ones. Sears' research supports these predictions.

The legitimacy of birth order effects has been disputed in the case of several supposedly "proven" characteristics. A highly noted study by Schooler (1972) suggests that when controls on time, place, and sex are removed, there is no evidence of any birth order effects; for example, in other times and places, the privileged position of the firstborn male did lead to definite birth order effects. He recommends that other relevant variables be taken into account, such as density and sex of siblings. Afterwards, a more consistent pattern of birth order effects may emerge.

However, Breland (1973) contends that birth order effects on verbal achievement do exist and these are not caused by either population bias or socioeconomic differences. Even with demographic factors controlled, Breland demonstrated that firstborns scored consistently higher in achievement tests than laterborns.

Zajonc (1976) argues that age gaps and birth rates explain the effects of birth order on intelligence. Short age gaps are disadvantageous for intellectual performance of siblings. Nevertheless, his findings reveal that "children born early in the sibship perform better on intelligence tests than later children when intervals between successive births are relatively short" (p. 234).

The firstborns' intellectual advantage can be modified or even reversed in families with wide age-spacing between siblings. In that case, "laterborns have the intellectual advantage of living in an environment enriched by interaction with both relatively mature siblings and parents" (Pfouts, 1980, p. 578). The literature offers a figure of six years or less in spacing as the cutoff after which effects may be reversed.

A major factor in determining whether birth order expectations are met in a particular family is the degree of success perceived by the individual. If a firstborn is less intellectually able than younger siblings, he or she will suffer adverse effects from social comparison with the more gifted siblings. This occurs because, according to Pfouts (1980), for secondborns equality means success, but for firstborns equality is a kind of failure.

There are discrepancies found for birth order effects on self-esteem. Nystul (1974) gives a clear summary of the various viewpoints and a resolution of the topic. According to Adler (1956), since the second child's birth brings a shift of attention away from the firstborn, he or she may feel "dethroned." This theory suggests that the firstborn may grow up feeling deprived and, as a result, may have a lower self-concept.

Sampson (1965), in reviewing several studies, found no relation between birth order and self-esteem. Rosenberg and Sears indicated that birth order does have a significant effect on self-esteem and self-concept. They found that firstborn and only children have significantly higher self-esteem and self-concept than laterborns.

To resolve this issue, Nystul looked again at Adler's conclusions. Perhaps competition is the actual result of dethronement. The firstborn, in this case, will attempt to regain his or her original position. In addition, being the oldest, the firstborn is always the first in novel situations and therefore still has a good deal of attention focused in his or her direction.

Although Sampson's review found no birth order effects for self-esteem, most of the later studies did find such effects. In reviewing these studies from the birth order literature, the existence of discrepancies in the results is obvious. These discrepancies may be explained by distinguishing between birth order and ordinal position.

Neid's explanation helps to clear some of the contradictions.

> What seems to be more important than chronological birth order is the interpretation the person makes of birth circumstances. Thus, at times, authors seem to be referring to psychological definitions of birth order, while the researcher is investigating chronological ordinal birth position (Neld, 1977, p. 48).

Based on this explanation, one need not concur that ordinal position is the same as birth order. The child who takes the role of firstborn, according to the objective characteristics studied in the literature, is not necessarily the first child that is born into the family.

Adler, the forerunner in the field of birth order, had clear ideas on the importance of birth order and ordinal position. Although the import of these factors was recognized, "the individual's perceptions of his position and role and his conclusions about them, rather than the position itself, would constitute the subject of the Adlerian's study" (Shulman & Mosak, 1977). The problem with many birth order studies is the failure to recognize that it is the psychological position of the child within the family which is crucial.

Here, ordinal position will refer to the "numerical place of an individual's birth in the order of births in his or her family"

(Manaster, 1977, p. 6). Ordinal position may also be referred to as objective birth order.

Subjective birth order will be referred to as such, or just as birth order. Birth order is the perceived position in the family or the individual's subjective experience of birth order. As discussed earlier, there are accepted characteristics associated with ordinal position (or objective birth order). By identifying with such characteristics, an individual is, in effect, identifying his or her subjective birth order. For example, an individual who sees himself as ambitious, responsible, and rule-oriented would be identifying with the firstborn position. His birth order, therefore, is firstborn regardless of his actual ordinal position.

To determine subjective birth order, some measure of self-perception must be used. Toman (1969, 1970) agrees that personality is affected greatly by family structure which includes items such as sex of siblings and ordinal position. He presents descriptions of various personalities based on this hypothesis. These were used in this study as one measure of subjective birth order. Birth order was determined by the subject's choice of one of the descriptions offered by Toman.

Vockell (1971) argues that Toman's descriptions are not accurate because people cannot identify themselves accurately. This is due, according to Vockell, to inherent lack of self-knowledge and to the social desirability of certain descriptions. Another problem, according to Leventhal (1970), lies in Toman's reliance almost entirely on "modeling and positive sibling interactions, whereas

in reality, there is likely to be some negative modeling and aversive interaction" (Vockell, 1971, p. 1010).

Vockell's main criticism was that subjects were unable to identify themselves accurately. This was largely discounted by Neld's (1977) successful use of subjective measures. Neld demonstrated that "the use of psychological definitions of birth order is a parsimonious, reliable, and valid procedure for translating Adlerian theory into both research and practice" (p. 51). Based on that study, I attempted to use several measures of subjective birth order to help explain inconsistent birth order findings.

Returning to the attempt to distinguish birth order from ordinal position, the unique situation of each child becomes important. In 1930, Alfred Adler suggested that the

> psychic situation of each child is individual and differs from that of others, because of their order of succession. . . . It is not, of course, the child's number in the order of successive births which influences his character, but the situation into which he is born. Thus, if the eldest child is feeble-minded or suppressed, the second child may acquire a style of life similar to that of an eldest child (p. 151).

Some differences in family environment for first as opposed to second borns are generally acknowledged, keeping in mind the unique situations of each individual. Both Lasko (1954) and Sears (1950) report that firstborns, for some period of their lives, have only adult models in their immediate family and are free of competition from siblings for parental attention. Later-born children, on the other hand, find more competition for parental attention and have older siblings as well as adults available as

models. The attitude of the mother toward the child tends to be more relaxed and less anxious with later-born children than with firstborns. Only and youngest children are alike in not having the experience of superiority with respect to a smaller, less-experienced sibling that other children have.

"Throughout childhood, later-born children tend to have already experienced vicariously through older siblings the movement into new and potentially stressful situations" (Warren, 1966, p. 39). Each of these differences in situation for first as opposed to second borns yields a slightly different environment in which to develop, even within the same family. The situation for each child is unique and may not necessarily be the situation traditionally associated with his or her ordinal position.

Shulman (1977) characterized the difference in situation for first and second born children in a normal family structure:

> The firstborn once had it all to himself and would still prefer to be the first and foremost. He tends to feel entitled to rank. The second child started late and has to catch up. Someone always seems to be ahead of him, a standard bearer against whom he measures himself (Shulman and Mosak, 1977, p. 115).

Children's perception of their situation differs greatly depending on whether they see themselves as "successful." A "failed" firstborn may completely give up, while the second child, unable to catch up, may switch to a new area of endeavor in which there is no competition with the eldest (Shulman and Mosak, 1977). According to Adler (1927), the oldest child is larger and stronger and older, so it may be easier to excel. However, this child also feels he or she must be more clever. This arises from the notion that for

secondborns, equality means success but for firstborns, equality is a kind of failure. Therefore, perception of success or failure has an impact on a child's perception of position in the family or on his or her birth order.

Adler's (Shulman and Mosak, 1977) classic description of the effects of birth order contains the following features:

> 1) Children of the same family are not born into the same environment. . . .
> 2) It is not the actual order of birth, but the psychological situation which is important. . . .
> 3) Marked difference in age between siblings tends to reduce competition between them.
> 4) Birth order is not an absolute determinant, only an influence. The reaction of the parents to the child is at least as important (Adler, 1964, pp. 96-120).

Here, Adler emphasizes the importance of the psychological birth order of the child; in addition, he reminds us that birth order does not have an all pervasive influence.

Still, there are certain impinging factors that often cause a difference between ordinal position and subjective birth order. Shulman and Mosak (1977) gave several examples. First of all, children seven or more years apart are not in competition with each other. In a two-child family with such an age difference, each child will tend to function more as an only child.

In some families, an outside competitor, be it cousin or younger sibling of a parent, may live in the house or close by and compete for the parents' favor. Positions in the family may be occupied by these outsiders, causing a change in the child's position. In this study, therefore, subjects were only included if they had no adults other than their parents living in their homes.

Another consideration is the case of deceased siblings. "A child who has lived long enough to become a significant sibling in the family and then dies doesn't usually disappear from the sibling constellation. More commonly, such a child is idealized and remains an ever-present standard of comparison" (Shulman & Mosak, 1977, p. 119). To assure that I was studying two child families, I included only subjects who both in the past and presently have one sibling. In this way, the subjects' perceptions were more assuredly those of an individual in a two child family.

A significant determiner of a child's behavior and perceived position in the family comes from the roles available in the family. Children normally try to find a niche that has not been filled. According to Dreikurs (1950, p. 41), a child "trains those qualities by which he hopes to achieve significance or even a degree of power and superiority in the family constellation" (Manaster, 1977). If one child has already filled another's traditional role, he or she may assume a different position than would be expected according to the ordinal position. For instance, if a secondborn takes on all the responsibilities in the family and is very ambitious and academically-oriented, the firstborn child may look to excel in social areas; if the firstborn gives up in defeat, he or she may not excel at all.

> A multitude of factors impinge on the child in the family: Personalities of both parents, their relationship, their cooperation as partners and as parents, the health of all family members, socioeconomic status, religiosity . . . birth order position, etc.. Adler [1932, p. 108] insisted "that the situation is never the same for two children in a family; and that each will show in his style

of life the results of his attempts to adapt himself to his own peculiar circumstances" (Manaster, 1977).

Although there are many factors impinging on the child, sex of siblings has a special impact. This can be seen by the degree of competition between siblings of the same sex versus those of the opposite sex. Siblings of the same sex tend to compete to determine who is the "boy" or the "girl" of the family. Because of the uniqueness theory, which allows a unique position for one child of each sex, specific conditions may lead to lower self-concepts for males and females with one same-sex sibling.

According to Sutton-Smith and Rosenberg in The Sibling (1970), the sibling influence theory must be combined with one of the parent-derived theories such as dethronement or anxious-parent to explain birth order differences. However, this difference has been frequently overlooked. Regardless of parents' interaction with their children, siblings are responsible for many of each other's behaviors and personality differences. According to Sutton-Smith and Rosenberg, "'It is conceivable that child-child influences are as important as parent-child influences are with later-born children, but it is not conceivable that they are as important with first-born and only children.'" (Adams, 1972, p. 416).

Since subjective birth order is so difficult to define and is due to so many impinging factors, the question of whether subjective birth order matches ordinal position was approached in an indirect fashion. An attempt was made to determine subjective birth order through measuring the individual's self-perception rather than trying to take into account all the factors (although some of the factors

were taken into account in the demographic variables). Self-perception is most relevant for the objective characteristics that are usually associated with the ordinal positions. Self-perception of these characteristics really does define subjective birth order. By using sex of siblings as an independent variable, a determination was made of the influence of this important impinging factor on subjective birth order.

II. QUESTIONS

1. Does subjective birth order match objective birth order?
2. How does sex of siblings affect this match?

III. SUBJECTS

The subjects were 85 students at The University of Tennessee in undergraduate Psychology courses (45 males, 40 females). Subjects were all white and were all American and were from two-child families in which both parents were alive and living together at least through the child's 12th year. No adults besides parents were living in the house. There was no more than six years spacing between siblings and no subjects had siblings who were no longer living. All subjects were 18 years or older. After selecting subjects according to the above criteria, income of parents, education of parents, and employment of parents were taken into account.

Based on the independent variables of sex, sex of sibling, and birth order, eight birth order categories were defined:

firstborn male with a brother	M1M
firstborn male with a sister	M1F
secondborn male with a brother	MM1
secondborn male with a sister	FM1
firstborn female with a brother	F1M
firstborn female with a sister	F1F
secondborn female with a brother	MF1
secondborn female with a sister	FF1

IV. METHODS

In attempting to measure subjective birth order, measurements of self-concept give the needed subjective clues in deciding with which birth order a person really identifies. Specifically, measuring self-concept on the dimensions that have been objectively associated with birth order gives a measure of subjective birth order.

Fitt's Tennessee Self-Concept Scale was used as a measure of self-concept on the dimensions of identity, self-satisfaction, behavior, physical self, moral-ethical self, personal self, family self, and social self. The total positive (total P) score reflects the overall level of self-esteem while the individual scores reflect self-esteem in specific areas. The consensus in the literature is that firstborns tend to exhibit higher levels of self-esteem. Based on this assumption, high scores on the Tennessee Self-Concept Scale reflect a higher degree of perception as a firstborn.

Based on objective characterizations of birth order categories in the literature, a questionnaire, presented in the Appendix, forced

choices to be made between firstborn and secondborn characteristics. The questionnaire, as a second measure of subjective birth order, was scored so that a high score revealed a higher degree of perception as a firstborn.

Toman wrote descriptions of birth order categories based on both birth order and sex of siblings. In studying two-child families, four different descriptions from Toman were presented to each subject (a different four were given to males and to females). The subjects chose the description that they thought sounded most like themself. Here, the subjects could either "match" or "not match" their respective objective birth order. These descriptions, as a third measure of subjective birth order, are also presented in the Appendix.

Demographic variables were collected on age spacing, income, whether parents are employed, parents' educational level. Subjects with siblings more than six years apart were excluded from the study.

V. PROCEDURES

Subjects were recruited by posting signs for extra credit in undergraduate Psychology courses. The volunteers were asked to be as honest as possible and were told that all information was confidential. No identifying information was requested.

The subjects filled out background information and answered a forced-choice questionnaire, chose one of four descriptions that best described them, and completed the Tennessee Self-Concept Scale. The entire procedure lasted about 30 minutes.

VI. RESULTS

The data were first analyzed to see if the subjects in the eight birth order categories differed demographically. Using analysis of variance, no significant differences were found for income, mother's educational level, father's educational level, employment of mother (yes or no), and employment of father (yes or no). Therefore, it was assumed that subjects in the various groups did not begin with significantly different backgrounds.

A 2 x 2 x 2 factorial analysis of variance design was used to analyze the data obtained. The design included two levels of sex (male and female) two levels of sibling's sex (same sex and different sex), and two levels of birth order (firstborn and secondborn). These independent variables were analyzed in relation to the following dependent variables:

choice of Toman's descriptions--DESCRIP--match or no match

score on questionnaire--DEGBO--degree of perception as firstborn

scores on each dimension of the Tennessee Self-Concept Scale

Using Toman's characterizations of birth order categories (DESCRIP), a subject's choice was scored as either "match" or "no match." "Match" represented a self-description that matches that subject's objective birth order, while "no match" represented a self-description that is other than his or her objective birth order (see Table 1).

On this measure, chi squares were not significant. Therefore, self-description does not significantly match objective characterizations. When testing whether self-descriptions significantly contradict the

Table 1. Matching of Self-Description by Birth Order and Sex of Sibling.

Birth Order	Sibling's Sex: Same	Sibling's Sex: Different
	No Match	
Firstborn	13	17
Secondborn	11	20
	Match	
Firstborn	6	3
Secondborn	10	5

Note: Total number of subjects = 85.

characterizations, a significant chi square is found ($\chi^2 = 15.854$, $p < .001$). Therefore, self-perceptions, on this measure, significantly more often contradict the characterizations than are expected by chance alone. Although all groups chose NO MATCH significantly more often than MATCH, subjects with an opposite sex sibling showed the greatest degree of choosing NO MATCH (see Table 2).

The forced-choice questionnaire was scored to produce the degree of perceived firstbornness (DEGBO). Here, significant interaction ($F = 5.06$ $p < .03$) of birth order and sex of sibling was found. Firstborns with the same sex sibling perceived themselves as more like firstborns than did all other groups (see Table 3).

The Tennessee Self-Concept Scale was analyzed on the individual dimensions. For interaction of Sex of Siblings and Birth Order

Table 2. Matching of Self-Description by Sex of Sibling.

Result	Sex of Sibling	
	Same	Different
No match	24	37*
Match	16	8

*Score is different significantly at $p < .02$.

Note: Total number of subjects = 85.

Table 3. Scores of Degree Firstborn-Like (DEGBO) for Sex of Sibling by Birth Order.

Birth Order	Sex of Sibling	
	Same	Different
Firstborn	$.61_x$	.48
Secondborn	.51	.52

x = score is different significantly at $p < .03$.

Note: Score range: 0.00 to 1.00.

(SSB*BO), F tests were done; the statistics are shown in Table 4.

For the dimensions Identity, Self-Satisfaction, Behavior, Moral-Ethical Self, Personal Self, Family Self, Social Self, and Total Positive Score on the Tennessee Self-Concept Scale, firstborns with same sex sibling scored significantly higher than firstborns with different sex sibling. There was a less strong but still significant effect for firstborns versus secondborns with the same sex. That is, firstborns with the same sex sibling had higher self-concepts than secondborns with the same sex sibling. Because the Variability and Self-Criticism Score (lie score) were not significantly different for the different groups, the groups appear to be comparable.

On measures of Personal Self and Self-Satisfaction, sex interacted with sex of siblings and birth order. Separate analyses for males and females showed that the stronger effect was among the females (see Table 5 and Figure 1 and Table 6 and Figure 2). Therefore, females who are firstborn with same sex sibling will score higher than male firstborns with the same sex sibling on measures of Personal Self-Concept and Self-Satisfaction.

VII. DISCUSSION

Objective birth order does seem to match subjective birth order for certain birth categories. The birth order category of firstborn females with same sex sibling is the category most likely to see

Table 4. Scores on Self-Concept (SC) for Sex of Sibling by Birth Order.

	Birth Order				
	First		Second		
	Sex of Sibling		Sex of Sibling		
SC Dimension	Same	Different	Same	Different	
Identity	130.6_x	122.6_y	122.6_y	127.6	F=8.78, $p < .004$
Self-satisfaction	112.5_x	100.7_y	102.4y	105.3	F=6.36, $p < .02$
Behavior	116.5_x	107.4_y	109.8y	111.4	F=4.14, $p < .05$
Moral-Ethical	73.0_x	66.8_y	65.5y	69.3	F=7.98, $p < .06$
Personal Self	70.6_x	64.6_y	65.0y	67.1	F=6.78, $p < .02$
Family	73.1_x	65.2_y	69.5y	70.5	F=6.55, $p < .02$
Social	73.5_x	68.1_y	68.0y	70.0	F=4.28, $p < .05$
Positive	359.6_x	330.6_y	334.8y	344.3	F=7.86, $p < .007$

Note: Total possible score varies on different dimensions.
X = scores significantly higher than y at the p level given.
Scheffe Test was used for Analysis of Variance.

Table 5. Scores on Self-Satisfaction for Birth Order by Sex of Sibling after Separating Males and Females.

	Birth Order			
	First		Second	
	Sex of Sibling		Sex of Sibling	
Sex	Same	Different	Same	Different
Females	115.2_x	101.4	95.8_y	110.0
Males	108.9	100.0	105.7	100.9

Note: X = scores significantly higher than y at $p < .003$.
No significant differences were found between scores for males.

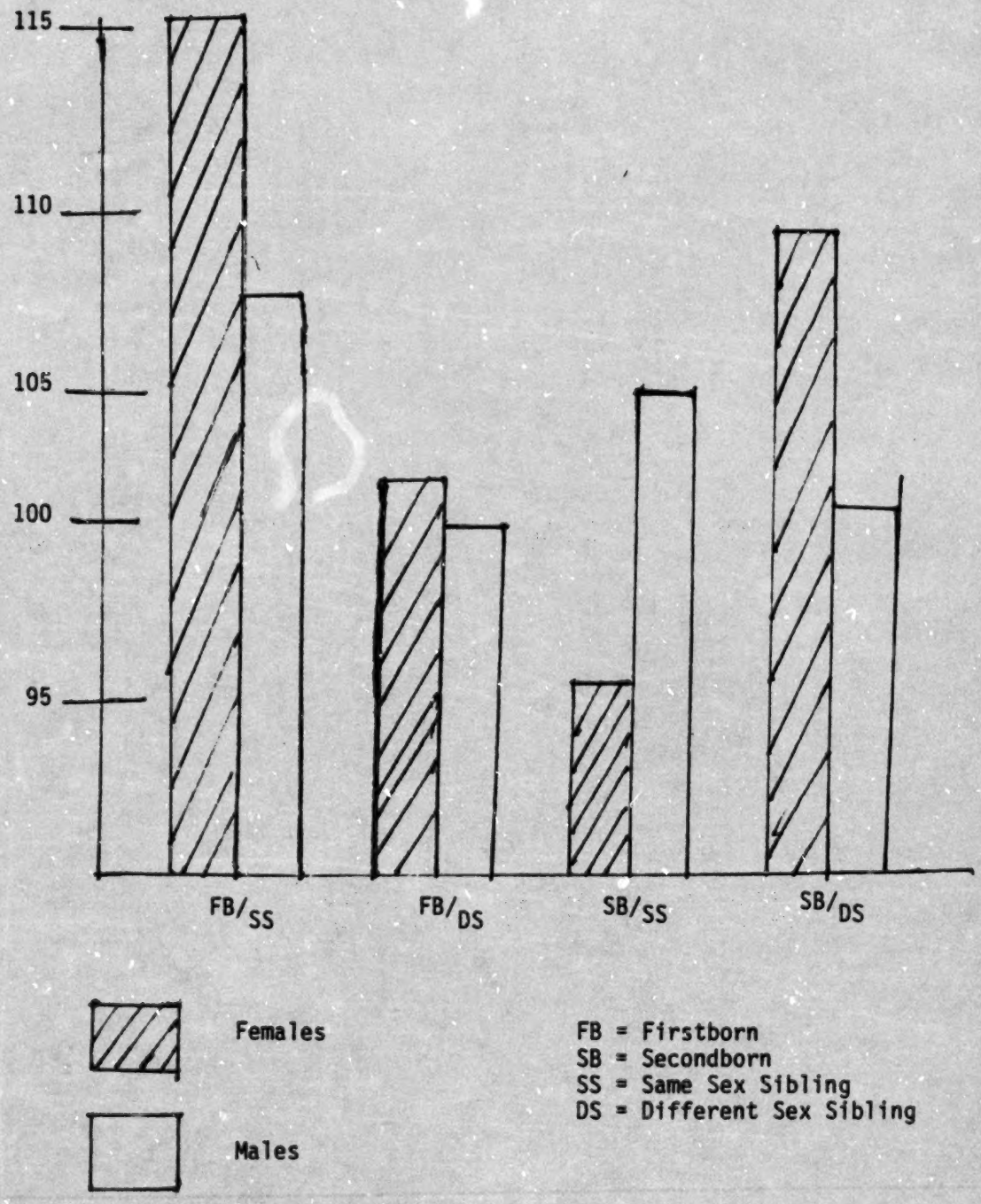

Figure 1. Scores on Self-Satisfaction for Birth Order by Sex of Sibling after Separating Males and Females.

Table 6. Scores on Personal Self for Birth Order by Sex of Sibling after Separating Males and Females.

	Birth Order			
	First		Second	
	Sex of Sibling		Sex of Sibling	
Sex	Same	Different	Same	Different
Females	72.8_x	63.5_y	62.1_z	68.2
Males	67.5	65.7	66.4	66.1

Note: X = scores significantly higher than y at $p < .0007$. No significant differences were found between scores for males.

themselves as firstborn-like. For this group, there is little discrepancy between birth order and ordinal position.

Sampson (1962) suggests that firstborn females are more independent and have a higher need for achievement than laterborn females. This would help explain the "firstborn" characteristics perceived by these firstborn females. Also, the laterborn females with an older sister tend to have lower self-esteem than the other groups. This may be due, in part, to having an older, independent sister with high self-esteem. In comparison with such a sibling, this laterborn could easily develop a lower self-concept.

Still, the fact that the firstborn females rather than the males scored the highest in self-perception as a firstborn has not

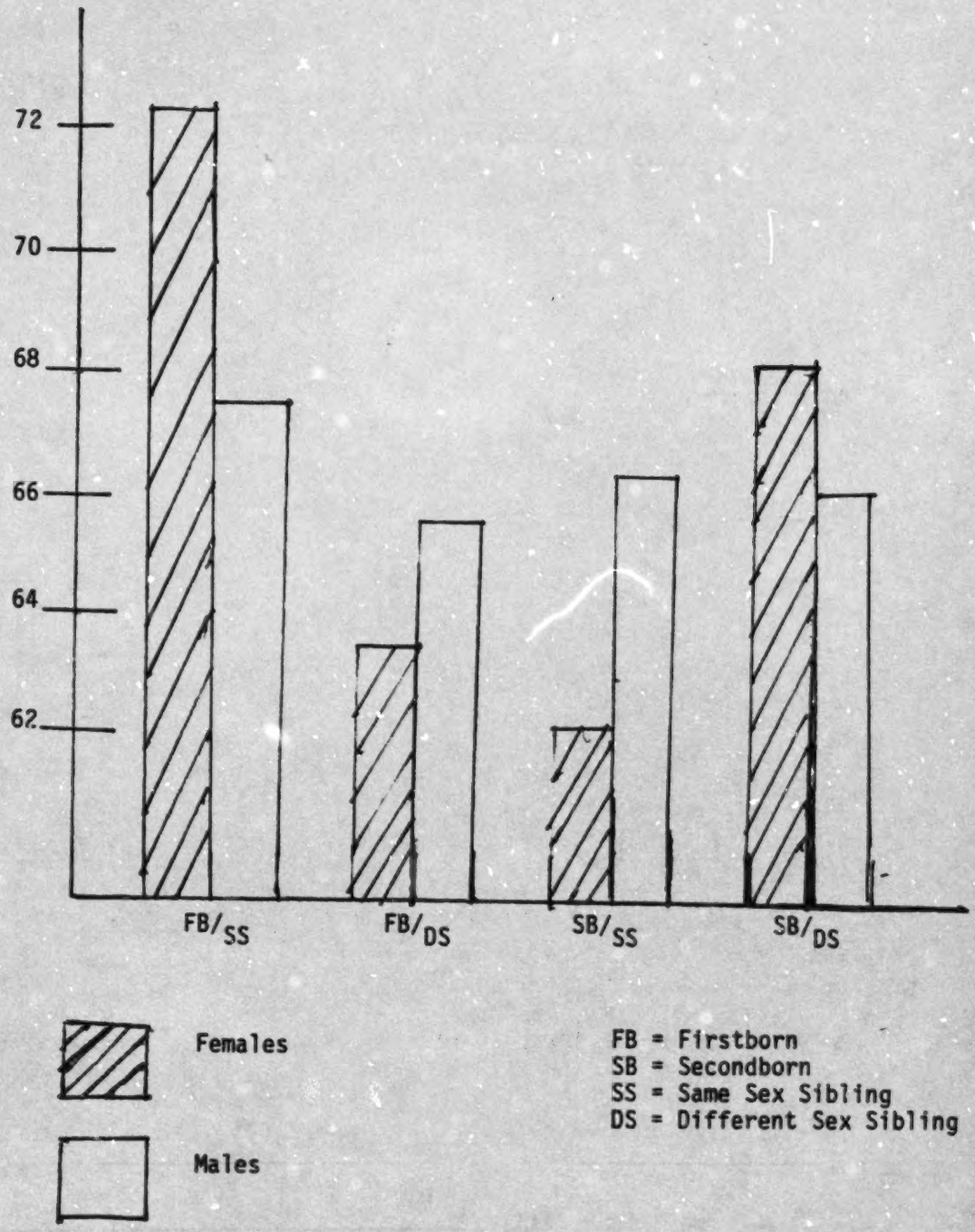

Figure 2. Scores on Personal Self for Birth Order by Sex of Sibling after Separating Males and Females.

been explained. Sampson (1962) reports that "the firstborn female is involved in rearing laterborn siblings and that the involvement gives the firstborn female more training in independence than the firstborn male" (Koch, 1955). In fact, according to Sampson (1962),

> the parents expect greater responsibility at an earlier age from the female, apply greater pressures to the female to show it, and express greater approval when she exhibits such responsible, independent behavior (p. 158).

Such independence fosters higher need for achievement, the taking on of greater responsibility, and a more self-confident individual. Therefore, due in part to earlier responsibilities taken on by the firstborn female (but not the firstborn male), she perceives herself more as a firstborn, than do the other groups.

Another possibility for the females' higher scores could be a bias in the sample. Because these females are college students, they may be a higher achieving, more independent and self-confident group than an average sample of females would be. Since it is still more likely for males to attend university, their group, on the average, might show a slightly lower achievement motivation and self-concept because these males are more of a cross-section.

Nevertheless, both male and female firstborns with the same sex siblings show higher perception as a firstborn than those firstborns with a different sex sibling. The characteristics associated with the firstborn that can develop such an ambition, responsibility and authority-orientation are accelerated in development by competition. According to Hornbostel and McCall (1980), competition between siblings

of the same sex is more intense than between siblings of different sexes. Given that firstborns are already disposed to develop strong need achievement, we might expect even higher need achievement to result when a firstborn is in competition with a same sex sibling. Hornbostel and McCall's (1980) hypothesis is supported here in this study.

According to the uniqueness theory, there is a place in the family for a "boy" and a "girl" of the family. Therefore, in a two-child family with same sex siblings, the firstborn, being the first on the scene, may capture the unique position; as a result, the firstborn with the same sex sibling will probably have a higher self-concept. High self-concept is associated with being firstborn so this individual will more likely describe himself or herself as a firstborn.

Previous studies were not always consistent and suggestions from several studies were heeded such as taking into account size of family, sex of siblings, age spacing, etc. On some measures, individuals from certain birth categories did perceive themselves in their respective ordinal position. However, using other measures, subjects often perceived or described themselves differently than the characterization of their respective ordinal position. Perhaps certain descriptions are more socially desirable than others and are therefore chosen to describe oneself. If this is not the case, perhaps subjective birth order quite often does not match objective birth order.

Future research might include longitudinal studies of particular families. In these cases, specific impinging factors on the child can be observed and taken into account.

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APPENDIX

TOMAN'S DESCRIPTIONS OF FEMALES

1. She can stand on her own feet, take care of others, and even boss them to an extent. She pretends to be surer of herself than she really is, but usually succeeds conveying that impression.

   At work she is likely to be responsible, competent, and to get things done. This particularly is true when she is in some position of leadership. She will tend to identify with her superior.

   Females will have to bow to her in order to win her sympathy or more tolerance. She will insist on being the final authority with them. She is both conscientious and self-righteous and will accept orders only from an authority such as her father.

   For men she is a hard girl to make. She tends to rebuff advances for quite a while. Often she appears so strong and independent that she discourages them anyway.

2. She likes an adventurous and colorful life. She wants entertainment and change, and if it does not come quite as she desires, she may seek it actively, though haphazardly and often on the spur of the moment. With her nothing ever seems fixed and settled.

   At work she can be excellent or erratic in her accomplishments, depending on external and internal circumstances, both of which are almost never under her complete control.

In almost no case would she be a good leader and boss of others. Only with a male boss who knows how to take her as a worker and as a woman may she be in a position to utilize all she is able to do.

With all her craving for adventure and distraction, she is frequently unoriginal in her contributions at work. She may be the most creative where she has the least intention to be.

She tends to be quite attractive to men and fairly inventive in getting places where they come in crowds. She can sparkle in conversation and impress by her dresses and make-up. There is a speck of pretense and connivance in the way she lets herself be carried away.

3. She can take care of men given the opportunity. She is independent and strong in an inconspicuous way. Often one only notices in retrospect how well taken, foresightful, and competent her actions have been. It's important to her that there is some prospect of retaining the men she has, of finding new ones, or of winning old ones back; men tend to like her. There is almost nothing in which she would not join, if the men request it, yet she would not participate as a man.

In regular working positions, she does not exactly excel in speed and diligence, but she is fine to have around. She creates an atmosphere that is conducive to good work. With women the story at her place of work is different. They are of direct interest only insofar as they themselves have a hold on men

of interest. Under such circumstances, even friendships between her and the women may develop.

4. She can attract men better than other girls can. This holds for most men. She is generally feminine and friendly, in some cases, she may be on the extravagant side, or somewhat oblivious to a man's feelings, and occasionally quite selfish, but seldom on serious issues nor ever when she has committed herself to a man. Even with rather special talents she does not tend to make a career with them.

   She is in no hurry. She can wait gracefully. To a greater extent than other women, she is guided by her feelings and instincts but not too infrequently she may be their victim.

   If a man has got hold of her, she cannot let him go.

   At work she is the ideal employee, the best person to work under somebody's guidance. She keeps track of everything she is supposed to and does not have to be told in detail. She gets along with her male fellow workers, although women don't always like her. She often is the "cutie," but she does not play this role. Often, she really and naturally is one.

TOMAN'S DESCRIPTIONS OF MALES

1. He is the leader, the master of men, whether he shows it by force or cunning. He is in charge. He is in control, not so much of a field of work or endeavor as he is of other people in that field. He can tell people what to do, again either directly or by clever soft-sell. He knows how to take them. He is on good terms with other males.

   He also tends to be a good worker where he chooses to, and a good leader of work, especially where work and leadership can be combined. He can inspire others, take the greatest hardships upon himself, and become even stronger as he does so. When it comes to matters of life and death, he will only be the second-most daring.

   He is a tough guy with women. He will not fall for any of them, but be delighted and thrilled, though outwardly unwincing, if they fall for him. He will tend to treat girls like younger brothers, expect them to live up to his assignments, to do even better than males, to admire only him, or certainly no one else, and to be content with very little in return.

2. He is a capricious and willful man, a person who can surprise and amaze his elders but also put them at a loss, annoy, and antagonize them. On the surface he gives the impression as if he would tolerate nobody above him, as if independence and freedom are among the greatest of his concerns. He will give in to no one. Yet on closer inspection it usually turns out that he needs the others in order to react to them.

He is an irregular worker, sometimes quite excellent in his achievements, and other times lousy, dragging, or altogether unproductive. Much depends upon his moods, and these depend upon the people he is working with and on his friends and his family at home. He is good at work, both when he can compete and when somebody superior in status, wisdom, skill, and the like is watching. If someone has an idea, he will have one too, and it may come close in quality to the original idea but seldom reach it.

He is at his best in free artistic or scientific endeavors, where his external environment and livelihood are taken care of by an impersonal institution, a wise or kind sponsor, or a motherly female. He may turn out to be a genius, if his talents are sufficient and a few carpets are laid out before him, or at least not taken away.

He is not a leader. If in a position of authority, he will appear to lack stability, justice, and insight into almost all problems involved, although he may get the gist of some of them quite well and establish fairly good relations with some of his "subjects."

He is a soft one with women, a gentleman, a cavalier, even where he plays the tough one or the cynic. Yet it seems he has little determination to win the most feminine of their favors. He tends to win them anyway, but then does not know quite what to do with them.

3. He is a friend of the girls and ladies, whether sincerely or with tongue-in-cheek. Love of the tender sex is the most important of all concerns, no matter how important his other engagements. If necessary, he will undergo stress and hardship, but at the end of the road there must be a woman. He can get along with men but he prefers to communicate via women, theirs or his own.

   He may be a good worker as long as there are female colleagues or co-workers, or secretaries, assistants, maids. He prefers a leading position to a subordinate one, not so much because he has felt a calling for it but because he thinks he is more likely to be able to set his own pace.

   Even so he tends to be a responsible worker. He is not exactly absorbed by his job or profession, yet he is still interested in doing a good job. He is a realist. He does not aspire the close-to-impossible. He wants his peace and fun.

   He is kind and considerate to women. He can court for a long time without getting discouraged, go out of his way to demonstrate his interest, and is seldom, if ever, ashamed of what he does for a woman. He will not operate in a vacuum though; she must be interested in him too.

4. He is a women's man. They love him. They dote on him. He evokes all kinds of maternal instincts in them. It does not matter what he undertakes or where he is heading, they will tend to be around, assist him in his endeavors or, more often, take care of his physical needs.

In reality, he will not always get such service, but this is what he would prefer and for what he will unwittingly tend to set himself up.

He is not a very regular and a systematic worker, but he can keep himself busy forever if his work corresponds to his talents and interests, or if it helps him satisfy somewhat fantasy-like goals. Where his talents are great, he is capable of real accomplishments, preferably as an individual or as the star of a team. He can lose himself in the pursuit of his work, provided there is little interference from others.

Though oblivious of the realistic and concrete contests of his work, and though believing that somebody will always pick up loose ends for him, he seems to follow an inner line. In some capricious and hidden ways he is consistent, at least wherever his technical competence is good. He will often miscalculate the nature of the tasks and will stumble along carelessly and gaily, sometimes zooming to great achievements and perfect solutions, sometimes procrastinating forever some simple and inevitable problems.

He can be nice to women, adore and flatter them, he can surprise them by his tact and care, but he does not always do so. He behaves much of the time as if he could afford to forget what women want and as if they would take to him anyway.

BACKGROUND QUESTIONNAIRE

1. Subject information (info about you)

   Age _____

   Sex _____

2. Sibling information (info about your brother or sister)

   Age _____

   Sex _____

___ 3. Through the time you were 12 years old, were your parents both alive and living together? (yes or no)

___ 4. If not, until what age were you when they were both alive and living together?

___ 5. Is your sibling living? (yes or no)

___ 6. If not, how old were you when he or she died?

___ 7. Besides the above-mentioned sibling, was there another sibling(s) in your family who is not now living? (yes or no)

___ 8. If so, how old were you when he or she died?

___ 9. Besides your parents, were there other adults living permanently in your house when you were growing up? (yes or no)

___10. If yes, what was their relation to you?

___11. What is your approximate family income? (put one letter in the blank)

   a) below $20,000

   b) $20,000-$30,000

   c) $30,000-$40,000

   d) $40,000-$50,000

   e) $50,000 and over

___12. Is your mother employed outside the home? (yes or no)

___13. Is your father employed outside the home? (yes or no)

___14. What was the highest educational level reached by your father? (place one letter in the blank)

a) some high school

b) high school graduate or equivalent

c) specialized training (business school, some college)

d) BA, BS

e) some post-graduate work

f) graduate or professional degree

___15. What was the highest educational level reached by your mother? (select answer from question #14)

QUESTIONNAIRE

___ 1. Your friend kept watch outside a store while a minor went in to buy beer; the minor, instead, robbed the store, and your friend was the only witness. Would you:

a) help the authorities solve the case

b) be loyal to your friend

___ 2. Which more concerns you:

a) having a job that is respected by your family

b) having a less respected job, but one that allows more time for family and recreation.

___ 3. If a friend drew an offensive picture on the board of your favorite teacher, and he or she wants to know who did it, would you:

a) stand by your friend

b) help your teacher

___ 4. A friend stole a photocopy of the exam the night before the exam. Would you:

a) tell the teacher

b) do nothing; it wasn't a big deal anyway

___ 5. Which of the following better describes you:

a) ambitious

b) sociable

___ 6. Which of the following better describes you:

a) cooperative

b) competitive

___ 7. Which of the following better describes you:

a) question authority

b) abide by authority

___ 8. If parents and peers have different ideas about something (music, clothes, movies), the:

a) parents' values are more likely to be the good ones

b) peers' values are more likely to be the good ones

___ 9. Which more concerns you:

a) getting good grades

b) being active in social groups

___10. With which of the following do you agree:

a) We must comply with reasonable rules, even though they may be unfair to a few individuals, until they can be changed

b) rules should be applied unevenly and only complied with in cases where it is fair to the individual

___11. If you had to choose, would you:

a) take a less prestigious job, but one that allows more time for family and recreation

b) take a job that has prestige in the community

___12. If your boss and co-workers disagree, you should:

a) agree with the co-workers

b) agree with the boss

___13. Which is more important:

a) helping others

b) meeting one's own needs first

___14. If the principal and students of a high school disagree on a dress code,

a) the students should be allowed to decide

b) the principal should have the right to decide

___15. Who makes a greater social contribution:

a) a good leader

b) a good worker

_____ choice of descriptions 1, 2, 3, or 4 which best describes <u>you</u>